

those adjacent are subject, as fractures, dislocations, and injury or rupture of the surrounding muscles. The ligaments of the shoulder, and hip-joint, have received, as their importance well warrants, a full share of our author's attention, and we do not remember to have elsewhere seen a more truthful or more accurate description of the former than has been afforded us by Mr. Humphry.

In bringing our brief notice of this very admirable volume to a close, we cannot but express the satisfaction we have derived from the perusal of many of its pages. The book issued from a Cambridge press is essentially a volume of luxury, and is, we believe, the most voluminous treatise on the anatomy of the skeleton yet published. The only recent treatise with which it can be well compared is that of Mr. Holden; this latter, however, is confined simply to the description of the bones, and does not, we think, include the examination of the joints. The plates, however, in Mr. Holden's work, are superior to those of the volume we have just noticed. Indeed, it had been our intention to advert more strongly to the character of Mr. Humphry's illustrations, but as we are told in the preface, that the artist is the author's wife, gallantry forbids us so to do. We doubt not, that should the work in question ever reach a second edition, many alterations in the engravings will have suggested themselves to the author.

J. H. B.

---

ART. XXI.—*The Microscope in its application to Practical Medicine.* By LIONEL S. BEALE, M. B., F. R. S., Professor of Physiology and General and Morbid Anatomy in King's College. 2d edition, 8vo.: London, 1858.

THE physician who at the present day decries the use of the microscope, and tauntingly asks what it has accomplished for practical medicine, is possessed of a degree of boldness, which, resulting as it does from ignorance and prejudice, is not entitled to the respect which ordinarily is accorded to this element of character. And yet, notwithstanding the thousand evidences that a material portion of our recent progress in medicine is due to this instrument, we find those (many of them occupying high positions in the profession) who with an obstinacy worthy of a better cause refuse to be enlightened, and are content to grope their way in the venerated darkness of the past. No arguments reach them, no evidence convinces them, no inducements persuade them. But thus it has always been with every important discovery. Harvey was ridiculed and persecuted, and in the time of Galileo there were not wanting those who could see more stars with the naked eye than with a telescope. We smile now at such recollections, and those who decry the microscope smile with us, little dreaming that the time is at hand when they will be classed with the opponents of the telescope, the steam engine, the magnetic telegraph, and other great works which have triumphed in spite of opposition.

It would of course be foreign to our purpose were we in this place to refer in detail to the long list of valuable discoveries which medical science has received through microscopical investigation. They are to be found in the standard works on anatomy, physiology, pathology, and that science of microscopical creation—histology.

But although the microscope has done much for our profession, there is still a great deal for it to accomplish; and, therefore, we hail with pleasure the appearance of every work calculated to lighten the labour of investigation, and to instruct those desirous of devoting themselves to the task of elucidating subjects as yet imperfectly understood.

This volume of Dr. Beale's must undoubtedly prove useful to those engaged in microscopical observations. The author is so earnest, so thoroughly imbued with love for the subjects of his scientific labours, that with his experience he could not fail to produce a work useful to those following kindred pursuits. It is also decidedly superior in every respect to the first edition, in which all reference to several important subjects was omitted.

In using the microscope there are so many precautions to be taken, so many causes of misinterpretation to be avoided, that the greatest care should be

exercised by every observer before deciding definitely upon the value of the appearances presented. Dr. Beale, we think, does not lay sufficient stress upon these points, and so far we regard his work as being defective.

The range of subjects considered by Dr. Beale is very extensive, and, perhaps, more so than is requisite in a work devoted, as its title imports, to instruction in the use of the microscope in clinical investigation. Thus, the art of lithography, the respiratory apparatus of the lower animals, the kidney of the horse, the specific gravity of the brain, &c., though all useful and important subjects of inquiry, are, we think, somewhat out of place in a work of the character of that before us. It is difficult, however, to quarrel with an author for giving us more than he promises.

The volume is divided into three parts. Part I. treats of *the apparatus necessary for the examination of objects of interest in a clinical point of view, of the practical operations required for demonstrating objects, and of recording the appearances observed*. This division occupies about a third of the work, and contains a great deal of matter useful to the student. We are glad to see the stress laid by Dr. Beale upon the advantages to be derived from submitting objects under microscopical observation to the action of chemical reagents—micro-chemistry, as it is called. By neglecting the use of chemical tests, the microscopical investigator will constantly fall into errors, some of which will certainly not conduce to the formation of an exalted opinion of his perceptive faculties.

In Part II. *the demonstration of the microscopical characters of tissues in health and disease, morbid growths and deposits, the fluid products of disease, and animal and vegetable parasites*, are considered. In this section the various parts and organs of the body are brought under notice, and their microscopical characters described. In addition to the other subjects mentioned in the heading, the various secretions and excretions are considered.

The illustrations which abound in the volume are in general well executed. We must, however, protest against the deception practised in the assertion on the title page that there are 270 wood cuts. Certainly most if not all persons would infer from the statement that there were 270 *different* cuts, whereas many of them are duplicated, and even in some cases triplicated. For instance, figs. 1 and 2 are reproduced as 211 and 213, fig. 3 as 210, fig. 4 as 261, fig. 5 as 177, fig. 6 as 183, fig. 9 as 137 and 217, in which latter it is inverted in order to mystify it a little, fig. 68 as 92 and 101 and 102, fig. 75 as 239, &c. &c. This plan is so thoroughly carried out as to reduce the number of different cuts nearly one half. Space is thus occupied which should have been more profitably filled, or else the size of the book should have been reduced and its cost lessened. Many of the cuts, moreover, are of the most trifling character, and altogether useless.

We must also notice the style of composition, which is vicious in the extreme, and, from its undignified character, is entirely unbecoming a work pretending to a scientific status. We cite one or two examples of inelegance of composition, premising that similar instances are to be met with on almost every page. At page 161 the author informs us that "perhaps the best organ for examining the structure of basement membrane is the kidney." At page 283 starch *globules* are mentioned; and at page 352 he states that "fungus *hæmatodes* is applied to any soft, highly vascular, bleeding fungoid growth."

Dr. Beale's obligations to his friends are so frequently expressed for the most trifling favours, as to lead to the supposition that notoriety is at a premium amongst his acquaintances. Thus, he thanks "Mr. Spratly" for specimens; his "friend Dr. Scott Alison" sent another; his "friend Dr. Sankey" furnished some cystine; his "friend Mr. Cubitt" forwarded a specimen of chylous urine; his "friend Mr. Masters" also sent a specimen of urine; and we might refer to numerous other expressions of Dr. Beale's remembrance.

Notwithstanding the manner in which Dr. Beale's book is written, it contains, as we have already stated, a great deal of valuable information, and fills a place in microscopical literature which should not be allowed to remain vacant. We are, therefore, for want of a better treatise on the subject, forced, in a measure, to recommend the volume before us to those commencing microscopical investigations, trusting that ere long we may be enabled to ask attention to one more worthy of commendation.

W. A. H.